AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A vulcanizate comprising:

a vulcanized rubber formulation comprising at least one vulcanized rubber and a filler, where the at least one vulcanized rubber includes a vulcanizate of a sequentially functionalized polymer that is prepared by

reacting an anionically polymerized living polymer with a functionalizing agent X' to produce an end-functionalized polymer that will react or interact with carbon black, silica, or both and that comprises a reactive electrophilic or nucleophilic site; and

reacting the reactive site with a functionalizing agent Y' to produce a sequentially functionalized polymer that will react or interact with carbon black and silica, where Y' is (i) an isocyanato alkoxy silane compound selected from the group consisting of gamma-isocyanatopropyl-triethoxysilane, gamma-isothiocyanatopropyl-triethoxysilane, gamma-isocyanatopropyl-trimethoxysilane, and gamma-isothiocyanatopropyl-trimethoxysilane (ii) an epoxy-generating reagent selected from the group consisting of epichlorohydrin, epibromohydrin, ~~triethoxysilyl propyl chloride, diethoxymethylsilyl propyl chloride, diethylcarbamyl chloride, 1-(3-bromopropyl)-2,2,5,5-tetramethyl-1-aza-2,5-disilacyclopentane,~~ a multi-epoxidized high-vinyl polybutadiene, a multi-epoxidized high-vinyl oligo-butadiene, a multi-epoxidized high-vinyl polyisoprene, and a multi-epoxidized high-vinyl oligo-isoprene, (iii) a short-chain polymer group, (iv) triethoxysilyl propyl chloride, (v) diethoxymethylsilyl propyl chloride, (vi) N,N-diethyl amino carbamyl chloride, ~~and~~ or (vii) 1-(3-bromopropyl)-2,2,5,5-tetramethyl-1-aza-2,5-disilacyclopentane.

2. (Original) The vulcanizate of claim 1, where the anionically polymerized living polymer is a copolymer of styrene and 1,3-butadiene.

3. (Previously Presented) The vulcanizate of claim 1, where X' selected from the group consisting of 1,3-dimethylimidazolidinone, N-methylpyrrolidinone, dicyclohexylcarbodiimide, benzonitrile, a substituted nitrile, a substituted aziridine, a thiazoline, a dialkylaminobenzaldehyde, a bis(dialkylamino)benzophenone, a substituted epoxy compound, N-methylcaprolactam, a substituted Schiff base, a substituted styrylmethyl derivative, vinyl pyridine, a short block of polyvinylpyridine, a polysulfoxide, a poly(carbodiimide), a poly(meth)acrylamide, a poly(aminoalkyl(meth)acrylate), polyacrylonitrile, polyethylene oxide, butyl glycidyl ether, monoglycidyl siloxane, polysiloxane with epoxide endgroups, diphenyl ethylene, and a functionalized styrene.

4. (Previously Presented) The vulcanizate of claim 1, where X' selected from the group consisting of 1,3-dimethylimidazolidinone, 3-glycidoxypropyltrimethoxysilane, N-methylpyrrolidinone, and monoglycidyl ether terminated poly(dimethylsiloxane).

5-7 cancelled

8. (Original) The vulcanizate of claim 1, where the filler includes carbon black, silica, or a mixture thereof.

9. (Original) The vulcanizate of claim 1, where the vulcanizate further includes a vulcanized natural rubber or vulcanized synthetic rubber other than the sequentially functionalized polymer.

10. (Currently Amended) A method for preparing a sequentially functionalized polymer, the method comprising:

reacting an anionically polymerized living polymer with a functionalizing agent X' to produce an end-functionalized polymer that will react or interact with carbon black, silica, or both and that comprises a reactive electrophilic or nucleophilic site; and

reacting the reactive site with a functionalizing agent Y' to produce a sequentially functionalized polymer that will react or interact with carbon black and silica, where Y' is selected from the group consisting of (i) an isocyanato alkoxy silane compound selected from the group consisting of gamma-isocyanatopropyl-triethoxysilane, gamma-isothiocyanatopropyl-triethoxysilane, gamma-isocyanatopropyl-trimethoxysilane, and gamma-isothiocyanatopropyl-trimethoxysilane (ii) an epoxy-generating reagent selected from the group consisting of epichlorohydrin, epibromohydrin, ~~triethoxysilyl propyl chloride, diethoxymethylsilyl propyl chloride, diethylcarbamyl chloride, 1-(3-bromopropyl)-2,2,5,5-tetramethyl-1-aza-2,5-disilacyclopentane,~~ a multi-epoxidized high-vinyl polybutadiene, a multi-epoxidized high-vinyl oligo-butadiene, a multi-epoxidized high-vinyl polyisoprene, ~~and~~ a multi-epoxidized high-vinyl oligo-isoprene, and multi-epoxidized high-vinyl, (iii) a short-chain polymer group, (iv) triethoxysilyl propyl chloride, (v) diethoxymethylsilyl propyl chloride, (vi) N,N-diethyl amino carbonyl chloride, ~~and~~ or (vii) 1-(3-bromopropyl)-2,2,5,5-tetramethyl-1-aza-2,5-disilacyclopentane.

11. (Original) The method of claim 10, where the anionically polymerized living polymer is a copolymer of styrene and 1,3-butadiene.

12. (Previously Presented) The method of claim 10, where X' is selected from the group consisting of 1,3-dimethylimidazolidinone, N-methylpyrrolidinone,

dicyclohexylcarbodiimide, benzonitrile, a substituted nitrile, a substituted aziridine, a thiazoline, a dialkylaminobenzaldehyde, a bis(dialkylamino)benzophenone, a substituted epoxy compound, N-methylcaprolactam, a substituted Schiff base, a substituted styrylmethyl derivative, vinyl pyridine, a short block of polyvinylpyridine, a polysulfoxide, a poly(carbodiimide), a poly(meth)acrylamide, a poly(aminoalkyl(meth)acrylate), polyacrylonitrile, polyethylene oxide, butyl glycidyl ether, monoglycidyl siloxane, polysiloxane with epoxide endgroups, diphenyl ethylene, and a functionalized styrene.

13. (Previously Presented) The method of claim 10, where X' is selected from the group consisting of 1,3-dimethylimidazolidinone, 3-glycidoxypropyltrimethoxysilane, N-methylpyrrolidinone, and monoglycidyl ether terminated poly(dimethylsiloxane).

14-16 cancelled

17. (Original) The method of claim 10, further comprising the step of reacting the reactive site with a chain-extending group Z to form a chain-extended functionalized polymer that comprises a reactive electrophilic or nucleophilic site.

18. (Cancelled)

19. (Currently Amended) A method for preparing a sequentially functionalized polymer, the method comprising:

reacting an anionically polymerized living polymer with a functionalizing agent X' to produce an end-functionalized polymer that comprises a reactive electrophilic or nucleophilic site; ~~and~~

reacting the reactive site with a functionalizing agent Y', where at least one of X' and Y' provides the sequentially functionalized polymer with a polar group, a basic

group, or an ~~a highly~~ aromatic group, and where at least one of X′ and Y′ provides the sequentially functionalized polymer with a basic group or group capable of forming a hydrogen bond, with the proviso that X' and Y' are distinct; and

where X′ is selected from the group consisting of monoglycidyl siloxanes and monoglycidyl ether-terminated polysiloxanes, and where Y′ is selected from the group consisting of N,N-diethyl amino carbonyl chloride, and 1-(3-bromopropyl)-2,2,5,5-tetramethyl-1-aza-2,5disilacyclopentane.

20. (Previously Presented) The vulcanizate of claim 1, where X′ is a functionalizing agent selected from the group consisting of 1,3-dimethylimidazolidinone and N-methylpyrrolidinone, and where Y′ is selected from the group consisting of isocyanato alkoxysilane compounds and epoxy-generating reagents.

21. (Previously Presented) The method of claim 10, where X′ is a functionalizing agent selected from the group consisting of 1,3-dimethylimidazolidinone and N-methylpyrrolidinone, and where Y′ is selected from the group consisting of isocyanato alkoxysilane compounds and epoxy-generating reagents.

22. (Cancelled)

23. (Cancelled)